globals

Defines input namelists and global variables

contents

1.1 overview

1. Here, and elsewhere, input variables are shown in `red`. The input list is read from file and broadcast in al00aa.

1.2 input list: `focusin`

- `Idisplay = 0` : silent output; -1 = details ;
- `Isymmetric = 1` : enforce stellarator symmetry;
- `Itopology = 0` : selects knottedness of plasma:
- `knotsurf = 0.200D-00` : radius of knotted plasma boundary;
- `ellipticity = 0.000D-00` : radius of knotted plasma boundary;
- `Linitialize = 0` :
- `Rmaj = 1.000D+00` : major radius of coils;
- `rmin = 0.500D+00` : minor radius of coils;
- `Ic = 0` :
- `Io = 1.000D+00` :
- `Iw = 1.000D+00` :
- `Lc = 0` : logical flag controlling length weight; see tlength;
- `Lo = 1.000D+00` :
- `Lw = 1.000D+00` :
- `NFcoil = 4` : Fourier harmonics for each coil;
- `NDcoil = 128` : discrete segments per coil;
- `Loptimize = -2/-1/0/1/2/3` : -1 and -2 are for testing the derivatives; 1 old descent; 2 new descent; 3 Powell nonlinear equations slover; 4 Newton;
- `Lnormalize = 0/1` : turn off/on normalizing weights;
- `weight_bnorm = 1.000D+00` : weight for bnormal constraint; bnormal
- `weight_tflux = 0.500D+00` : weight for toroidal flux constraint; torflux
- `target_tflux = 1.000D+00` : target toroidal flux; torflux
- `weight_ttlen = 0.000D+00` : weight for coil length; tlength
- `weight_eqarc = 1.000D+00` : weight for equal arc length constraint; equarcl
- `weight_ccsep = 0.000D+00` : weight for coil-coil separation ; coilsep
- `tauend = 1.000D-00` : artificial relaxtion “time”, evolve;
- `tautol = 1.000D-04` : o.d.e. integration tolerance;
- `Ntauout = 100` : intermediate time steps; evolve;

- `Savfreq = 1` : Saving Frequency; 1 means saving files for each step;
- `Nteta = 64` :
- `Nzeta = 64` :
- `absacc = 1.000D-08` :
- `absreq = 1.000D-12` :
- `relreq = 1.000D-01` :
- `xtol = 0.000D+00` : E04LBF tolerance 10*sqrtmachprec;
- `eta = 0.900D+00` : E04LBF accurance rate (step ration);
- `stepmx = 1.000D+05` : E04LBF Euclidean distance between solution and starting;
- `Mpol = -8` : Fourier poloidal resolution;
- `Ntor = 4` : Fourier toroidal resolution;
- `Lpoincare = 0` : to construct Poincaré plot;
  - if `Lpoincare` > 0, then the fieldline parameter is the cylindrical toroidal angle, and so B^{ϕ} must not equal zero;
  - if `Lpoincare` $= -1$, then the fieldline parameter is the length;
- `odetol = 1.000D-10` : Poincaré plot, pp00aa;
- `Ppts = 100` : Poincaré plot, pp00aa;
- `Ptrj = 8` : Poincaré plot, pp00aa;
- `phi = 0.0` : REDUNDANT;
- `iphi = 0` : Poincaré plot,
- `bstol = 1.000D-06` : tolerance in Biot-Savart integral; passed to oculus:bs00aa;
- `bsnlimit = 100000` : max. number of iterations used in Biot-Savart integral; passed to oculus:bs00aa;